

WHAT IS CLAIMED IS:

1. A coating composition comprising:

(a) at least one component selected from the group consisting of an organosilane represented by the following general formula (1), a hydrolyzate of said organosilane and a condensates of said organosilane;

(b) an organosiloxane oligomer having an SiO bond and a weight average molecular weight of 300 to 100,000;

(c) a photocatalyst; and

(d-1) an organic solvent having a surface tension at 20°C of 260  $\mu$ N/cm or less:



wherein,  $R^1$ , which may be the same or different when two or more  $R^1$  groups are present, represents a monovalent organic group having 1 to 10 carbon atoms;  $R^2$ , which may be the same or different when two or more  $R^2$  groups are present, represents an alkyl group having 1 to 5 carbon atoms or an acyl group having 1 to 6 carbon atoms; and  $n$  is an integer ranging from 0 to 2.

2. The coating composition according to claim 1, which further comprises (e) a polymer containing a silyl group having a silicon atom bound to a hydrolytic group and/or a hydroxyl group.

3. The coating composition according to claim 1 or 2, wherein said component (a) is (a-1) at least one component selected from the group consisting of an organosilane

represented by general formula (1) (wherein  $n$  is 1 or 2, and at least one of  $R^1$  groups is an epoxy group-containing substituted derivative), a hydrolyzate of said organosilane and a condensate of said organosilane; and

- 5       (a-2) at least one component selected from the group consisting of an organosilane represented by general formula (1) (wherein no epoxy group is contained in  $R^1$ ), a hydrolyzate of said organosilane and a condensate of said organosilane.

4. The coating composition according to any one of claims

- 10      1 to 3, wherein said component (b) has a group represented by general formula  $-(RO)_p-(R'O)_q-R''$  (wherein R and R', which may be the same or different, represent alkyl groups each having 1 to 5 carbon atoms, R'' represents a hydrogen atom or an alkyl group having 1 to 5 carbon atoms, and  $p+q$  is from 2 to 30), and  
15      a silyl group having a silicon atom bound to a hydrolytic group and/or a hydroxyl group.

5. A method for producing a coating composition which comprises hydrolyzing and/or condensing at least one selected from the group consisting of:

- 20      (a) an organosilane represented by the following general formula (1);  
          (b) an organosiloxane oligomer having an SiO bond and a weight average molecular weight of 300 to 100,000; and  
          (e) a polymer containing a silyl group having a silicon atom bound to a hydrolytic group and/or a hydroxyl group, in

the presence of (c') an aqueous dispersion of a photocatalyst having a pH of 3 to 9 and (d') an organic solvent in which the content of an organic solvent having a surface tension at 20°C of more than 260  $\mu$ N/cm is 20% by weight or less based on the  
5 whole organic solvent;



wherein, R<sup>1</sup>, which may be the same or different when two or more R<sup>1</sup> groups are present, represents a monovalent organic group having 1 to 10 carbon atoms; R<sup>2</sup>, which may be the same or different when two or more R<sup>2</sup> groups are present, represents an alkyl group having 1 to 5 carbon atoms or an acyl group having 1 to 6 carbon atoms; and n is an integer ranging from 0 to 2.

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*B27* 6. The method according to claim 5, wherein said component (a) is (a-1) at least one component selected from the  
15 group consisting of an organosilane represented by general formula (1) (wherein n is 1 or 2, and at least one of R<sup>1</sup> groups is an epoxy group-containing substituted derivative), a hydrolyzate of said organosilane and a condensate of said organosilane; or

20 (a-2) at least one component selected from the group consisting of an organosilane represented by general formula (1) (wherein no epoxy group is contained in R<sup>1</sup>), a hydrolyzate of said organosilane and a condensate of said organosilane.

7. A cured product obtained by coating and drying the  
25 coating composition according to any one of claims 1 to 4, or

the composition obtained by the method according to claim 5 or 6.

8. A cured product having a dry coating layer comprising any one of the following undercoating compositions (i) to (iv), 5 and having thereon a dry coating layer comprising the coating composition according to any one of claims 1 to 4, or the coating composition obtained by the method according to claim 5 or 6:

(i) An undercoating composition containing said components (a) and (e);

(ii) An undercoating composition containing said components (a) and (e), and (f) colloidal silica and/or 10 colloidal alumina;

(iii) An undercoating composition containing said components (a) and (e), and (g) colloidal cerium oxide and/or 15 colloidal zinc oxide; and

(iv) An undercoating composition containing said components (a), (e), (f) and (g).

9. A coating film having a dry coating layer comprising any one of the undercoating compositions (i) to (iv) specified 20 in claim 8, and having thereon a dry coating layer comprising the coating composition according to any one of claims 1 to 4, or the coating composition obtained by the method according to claim 5 or 6.

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